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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/694,635	10/27/2003	Robert Kamenoff	30952_CIP	2632

29773 7590 06/05/2006

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EXAMINER

BOATENG, ALEXIS ASIEDUA

ART UNIT

PAPER NUMBER

2838

DATE MAILED: 06/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/694,635

Applicant(s)

KAMENOFF, ROBERT

Examiner

Alexis Boateng

Art Unit

2838

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 March 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3,4 and 11-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3,4, and 11-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 3, 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lutz (U.S. 5,834,131) in view of Hall (U.S. 5,773,955) and in further view of Rosenbluth (U.S. 5,710,507).

Regarding claim 1, Lutz discloses wherein a self-heating battery for delivering its rated capacity when the battery is below a temperature when available battery capacity is limited comprising:

a battery (figure 2 item 18);

a heating element operatively connected to the battery and powered therefrom for heating the battery (figure 2 item 24);

a temperature sensor for determining the temperature of a battery (figure 2 item 26); and

a switch circuit operatively connected to said heating element and temperature sensor (figure 2 item 36) and responsive to said temperature sensor for switching on the heating element and raising the temperature of the battery to allow the battery to deliver its rated capacity when a sensed temperature of the

battery is below a temperature where available capacity is limited (figure 2 item 36; column 4 line 44 – column 5 line 15); a load current sensor (figure 2 item 40). Lutz discloses the invention as previously claimed, but does not disclose wherein said switch circuit comprising serially connected transistors, and further comprising a comparator circuit operatively connected to said temperature sensor and having an output operatively connected to at least one transistor in said switch circuit to switch on the heating element when temperature is below a temperature where available capacity is limited. Hall discloses in figure 5 wherein the power converter, item 24, includes switching circuits, item 100a, 100b, and 100c, having serially connected transistors, items 102a – c. At the time of invention, it would have been obvious to a person of ordinary skill in the art to modify the Lutz system with the Hall system so that the current is regulated in the system and an overcurrent is not provided to the heating resistors which can be fatal to the resistors and the system. Neither Lutz nor Hall disclose the remainder of the claim. Rosenbluth discloses in figure 2, wherein a comparator circuit, item 245, is operatively connected to a temperature sensor, temperature transducer item 230, and connected to at least one transistor, item 270, when the temperature is below a temperature where available capacity is limited. Rosenbluth explains this further in column 5 line 14 to column 6 line 45. Rosenbluth further discloses in column 5 line 14 to column 6 line 45 wherein the comparators are connected to a current sensor and switch the circuit to lock out the heating element when a battery cell is not in use. The two amplifiers, item

245 and 240 are connected to the current limited adjustable regulator, act as low and high current comparators because the comparators are capable of comparing both voltage and current. At the time of invention, it would have been obvious to a person of ordinary skill in the art to modify the Lutz and Hall system with the Rosenbluth so that if the battery temperature falls below some minimum level, it can be accurately monitored and heat can be effectively provided to the battery at the proper time.

Regarding claim 3, Lutz discloses wherein a transistor in said switch circuit comprises at least one field effect transistor (column 5 lines 56 – 58).

Regarding claim 4, neither Lutz nor Hall disclose wherein said comparator connected to said switch and said temperature sensor is operative for comparing temperature differential and turning the switch on and off and controlling operation of the heating element. Rosenbluth discloses in column 5 line 14 to column 6 line 45 wherein the comparator 245 is connected to the temperature transducer and is switched is off when the battery is not in use. At the time of invention, it would have been obvious to a person of ordinary skill in the art to modify the Lutz and Hall system with the Rosenbluth system so that the battery is not overheated while it is not in use.

3. Claims 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lutz (U.S. 5,834,131) in view of Hall (U.S. 5,773,955) and in further view of Rosenbluth (U.S. 5,710,507) as applied to claim 1 and in further view of Matsuyama (U.S. 2001/0004198).

Regarding claims 11 and 12, Lutz does not disclose wherein a battery discharging circuit connected to said battery for discharging the battery. Lutz also does not further disclose wherein a light sensing circuit operatively connected to the battery discharge circuit that actuates the battery discharge circuit after exposing to light the light sensing circuit. Matsuyama discloses in figure 3 wherein a battery discharge circuit, item 7, operative with the battery that when actuated, discharges the battery. In figure 3, Matsuyama further discloses wherein a light sensing circuit, solar panel item 4, operatively connected to the battery discharge circuit that actuates the battery discharge circuit after exposing to light the light sensing circuit. At the time of invention, it would have been obvious to a person of ordinary skill in the art to modify the Lutz system with the Matsuyama system so that discharging is regulated and so that an alternate method of regulated discharge is provided with the solar panel.

4. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lutz (U.S. 5,834,131) and Matsuyama (U.S. 2001/0004198) in view of McGrath (U.S. 5,939,865).

Regarding claim 13, neither Lutz nor Matsuyama do not disclose wherein the system further comprises a charge protection circuit operatively connected to said battery for limiting damage to the battery during charging. McGrath discloses in figure 4 item 9, wherein an overcharge protection circuit is implemented during charging. At the time of invention, it would have been obvious to a person of ordinary skill in the art to modify the Lutz system with the

McGrath system, so that battery is not overcharged which can damage the battery.

5. Claims 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lutz (U.S. 5,834,131) and Matsuyama (U.S. 2001/0004198) in view of Okutoh (U.S. 5,853,908).

Regarding claims 14, neither Lutz nor Matsuyama discloses wherein the system comprises a flying cell circuit operatively connected to said battery for meeting open circuit an cut-off voltage requirements. Okutoh discloses in figure 1 item 1 wherein an extra cell is employed when there is an over-voltage detected. At the time of invention, it would have been obvious to a person of ordinary skill in the art to modify the Lutz and the Matsuyama system so that the battery is protected from over-voltage and the battery life is extended.

Response to Arguments

3. Applicant's arguments filed 3/17/06 have been fully considered but they are not persuasive or are moot based on new grounds of rejection. **Regarding claim 1**, the applicant argues that the reference provides a microcontroller, which can be very expensive compared to the comparator circuit and the invention claimed does not contain a microcontroller. Lutz discloses in column 2 lines 56 – 60 wherein the system is low-cost, which means that the controller also is low costing. The applicant argues that the microcontroller is far more complex than the comparator circuit, but to a person

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of ordinary skill in the art, the controller is quite simple to use and carries out the same tasks as in the comparator circuit. In regards to the remaining arguments, see above.

4. **Regarding claims 11 and 12**, the applicant argues that Matsuyama does not suggest a battery discharge circuit operatively connected to a self heating battery in combination therewith. Since the battery charge circuit is powered by solar power, the battery is easily heated by solar energy, which suggests self heating.

5. **Regarding claim 13**, the applicant argues that McGrath does not suggest a charge protection circuit in combination with a self heating battery. The system disclosed in the McGrath reference contains transistors that heat up in response to the voltage inputs, column 6 lines 9 - 21. This suggests heating of the battery.

6. **Regarding claim 14**, the applicant argues that Okutoh does not disclose a flying cell circuit used in combination with a self-heating battery. The Okutoh reference discloses in the abstract wherein a heat generating resistance is provided. The Okutoh reference discloses a flying cell as the cells, items 1 and 2 are monitored individually as disclosed in column 3 lines 17 – 40.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alexis Boateng whose telephone number is (571) 272-5979. The examiner can normally be reached on 8:30 am - 6:00 pm, Monday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Karl Easthom can be reached on (571) 272-2084. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



KARL EASTHOM
SUPERVISORY PATENT EXAMINER